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TITLE : NI-BASE SUPERALLOY WITH HIGH CORROSION RESISTANCE AND HIGH
OXIDATION RESISTANCE FOR DIRECTIONAL SOLIDIFICATION USE, AND
DIRECTIONALLY SOLIDIFIED CASTING WITH HIGH CORROSION RESISTANCE AND
HIGH OXIDATION RESISTANCE

ABSTRACT : PROBLEM TO BE SOLVED: To provide an Ni-base superalloy excellent in oxidation
resistance as well as in corrosion resistance, suitable for use in high temp. parts used
particularly in fuels containing relatively large amounts of impurities such as S(sulfur) and
also requiring high temp. oxidation resistance.

SOLUTION: This Ni-base superalloy has a composition consisting of, by weight,
12.1-16.5% Cr, 3.7-5.5% Al, 1.1-5.0% Nb, 4.1-9.5% Ta, $\leq 10.0\%$ Co, $\leq 5.0\%$ W, $\leq 2.0\%$
Mo, and the balance Ni with inevitable impurities and practically free from Ti. This
superalloy is excellent in both corrosion resistance and oxidation resistance and suitable
for use in high temp. parts used for fuels containing relatively large amounts of impurities
such as sulfur and requiring high temp. oxidation resistance. By applying this superalloy to
a high temp. member, such as moving blades and stationary blades of a gas turbine,
power generating efficiency and reliability can be improved to a greater extent.

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